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The U.S. Farm Sector: How Is It Weathering the 1980's?

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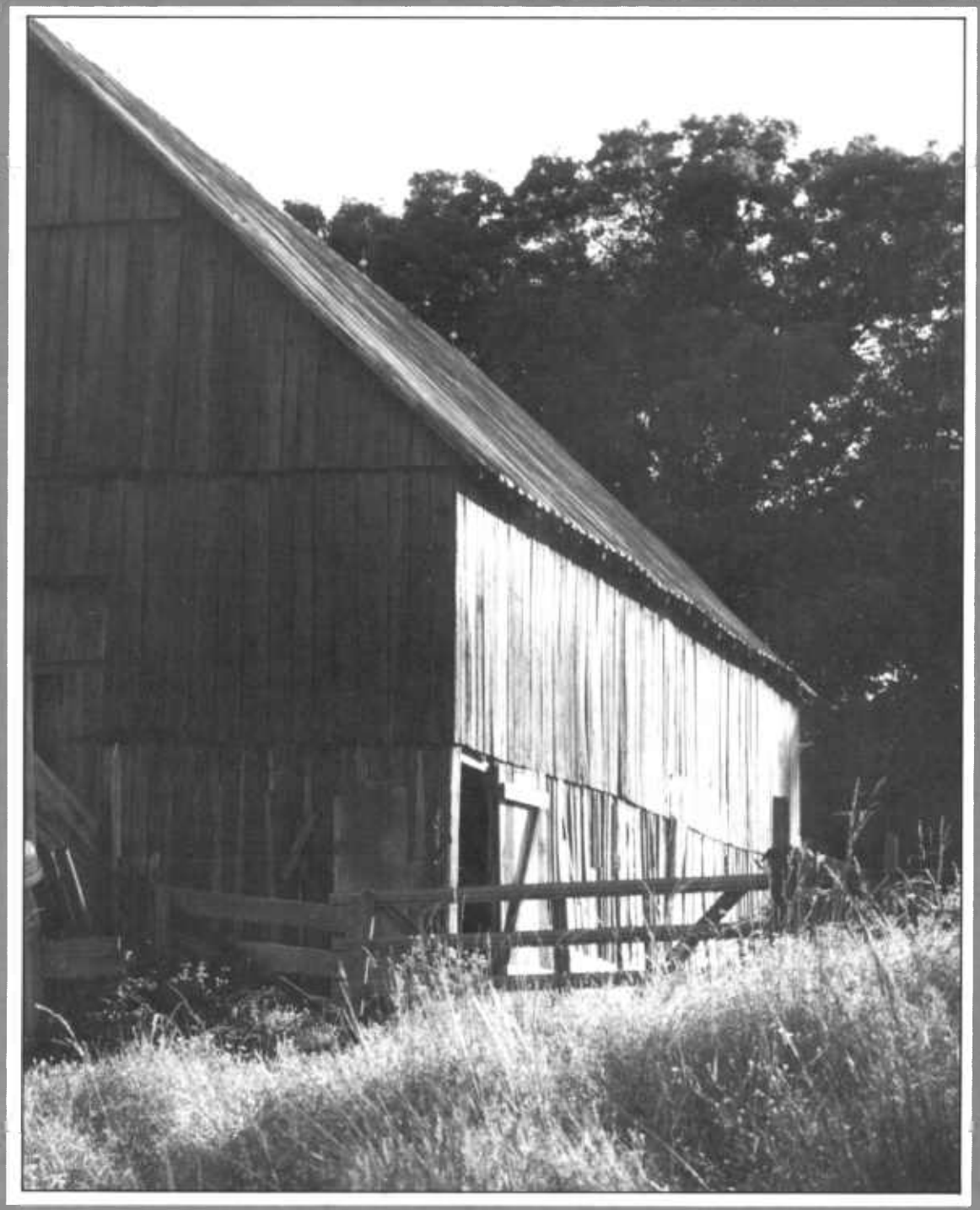

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Abstract

Commercial farms with gross annual sales of $40,000 or more (28 percent of all farms) generally had positive after-tax rates of return to equity in 1985. But noncommercial farms, those with gross annual sales of less than $40,000 (72 percent of all farms), showed small after-tax losses. The farm economy has deteriorated since 1981 when farmland values began to decline. By 1984, farming households earned only about 80 percent as much as the national average, compared with their historic high in 1973 when they earned almost 50 percent more than the national average. As many as 15 percent of all farm operators who were in business before 1980 may leave farming for financial reasons before the current economic adjustments end. Rural counties and communities whose economies rely on agriculture will have trouble maintaining many services as declining farmland values shrink tax revenues.

Keywords: Family farms, farm household income, rate of return, farm assets, farm debts, debt/asset ratio, farming-dependent counties

Preface

This report is based on the ninth report to the Congress on the status of family farms. These reports have been submitted annually in accordance with the Food and Agriculture Act of 1977 (section 102), the Agriculture and Food Act of 1981 (section 1608), and the Food Security Act of 1985 (section 1441). The authors gratefully acknowledge the contributions of previous research conducted by their colleagues: Mary Ahearn for the analysis of farm-operator household incomes; Bernal Green and Mindy F. Petrulis for the analysis of farm and rural economic linkages; Donn A. Reimund for the analysis of farm business rates of return to equity; and David Brown for the historical context of farm population change.

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Summary

Commercial farms with gross annual sales of $40,000 or more (28 percent of all farms) generally had positive business incomes and rates of return to equity in 1985. But noncommercial farms, those with gross annual sales of less than $40,000 (72 percent of all farms), showed small after-tax losses. The farm economy has deteriorated since 1981 when farmland values began to decline. By 1984, operator households' average income was only about 80 percent as much as that for all U.S. households, compared with their historic high in 1973 when farm households earned almost 50 percent more than the national average. Farm household income improved in 1985 but was still below that of all U.S. households. As many as 15 percent of all farm operators who were in business before 1980 may leave farming for financial reasons before the current economic adjustments end. Rural counties and communities whose economies rely on farming and farming-related businesses will have trouble maintaining many services as declining farmland values threaten local tax revenues.

Commercial farms, providing 90 percent of all U.S. agricultural production, were generally profitable enterprises in 1985. Farms with gross annual sales of $40,000 to $249,999 (24 percent of all U.S. farms) accounted for 41 percent of all agricultural production, their average household income equalling the national average. Farms with sales of $250,000 to $499,999 made up an additional 3 percent of farms and accounted for 17 percent of production. Their average incomes were more than triple the national average of all households. Very large commercial farms with gross annual sales of more than $500,000 were 1 percent of all U.S. farms and accounted for 32 percent of total production. Their average incomes were high and their after-tax rates of return to equity were comparable to nonfarm investments.

Noncommercial farms, providing only 10 percent of all U.S. agricultural production, lost money in 1985, as they have each year since 1980. Substantial off-farm income offset these farm losses and provided these households with total incomes lower than the national average. Small farms have limited potential for meeting the income needs of the household, and their contribution to total agricultural production is small.

After-tax rates of return on annual expenditures for noncommercial farms are only slightly less than those for commercial farms. The returns to noncommercial farms are largely in the form of increased asset values and tax-sheltered savings. The returns to commercial farms come largely from farming operations. This analysis, however, is based on historic incomes and tax provisions and does not reflect the changes of the Tax Reform Act of 1986.

About 11 percent of all U.S. farms are at risk of going out of business for financial reasons. These farm households spent more than they earned from all sources in 1985 and had debts equal to 40 percent or more of the value of their assets as of January 1, 1986. Farm financial stress is highest among younger operators, commercial farms, dairy and cash grain farms, and farms in the Lake States and the Northern Plains.

Two factors affect the extent to which farm financial problems result in local community economic stress: the dependence of farming on export-sensitive crops (corn, wheat, soybeans, cotton) and the dependence of the area's employment on farms and agriculture-related industries. Both these factors are strongest in the Northern Great Plains, the Corn Belt, the Lake States, and the Delta States. Farming-dependent communities are more likely to have lost population in the 1980's, to have an older population, and to have economic fortunes that rise and fall with farming.

The U.S. Farm Sector:

How Is It Weathering the 1980's?

David Harrington
Thomas A. Carlin*

Introduction

This report assesses the condition of U.S. farms in 1985 by three primary measures: size of farm, family income level, and owner's equity in the farm. The analyses are based on the latest published information from the *Economic Indicators of the Farm Sector: National Financial Summary, 1985* [7] and on survey information from the Economic Research Service's (ERS) 1984 and 1985 Farm Costs and Returns Surveys (FCRS).[1]

This report discusses several important issues: the latest financial conditions in the farm sector as of January 1, 1986, declining asset values in the sector, what has happened to people and resources forced out of farming by financial conditions, and linkages between economic conditions in rural areas and conditions in the farm sector. This year's report also analyzes rates of return to farm assets.

Farms, Production, and Income Conditions by Size of Farm

This diversity of the farm sector is commonly described by both farm income and returns to equity by size of farm. Two commonly used measures of farm size are acreage and gross value of sales. Volume of production of commodities and value added are also used but not as often.

The acreage measure of farm size overemphasizes the role of land in farm organization and biases analytical results toward land-extensive operations such as cattle ranches or extensively operated grain farms. For example, a 2,000-acre cattle ranch would be considered 10 times larger than a 200-acre feedlot, even though the value of gross sales from the feedlot would probably be more than 10 times that of the ranch.

Value-of-sales is a better measure of farm size than acreage because it is not biased by intensive or extensive use of resources. A value-of-sales measure offers comparable results, unlike measures of the volume of production of specific commodities which may create the need to compare bushels of grain with bushels of apples, for example. To create a value-of-sales measure, we give dollar values to volumes of commodities produced on each farm, add up those values, and array the farms by sales classes. However, size classes measured by value-of-sales do not accurately reflect the purchasing and finishing of semifinished farm products. For example, a beef feedlot finishing 8,000 head per year, 2,000 head every 3 months, would show up as being the same size as a ranch which raised and finished 8,000 cattle per year, even though the latter is much larger than the former in terms of value added to the product.

A value-added measure, the value of products sold minus the value of inputs purchased, would be the best measure of farm size, one that overcomes all shortcomings of the previous measures. However, value-added measuring requires detailed information on sales, input purchases, and assets of the farm which are not currently available for any large sample of farms. Thus, data gathering and analysis costs are too high for value-added measures to be made regularly. This analysis is accordingly based on sales classes, recognizing their limitations.

Farms by Gross Sales Class

We have identified two broad groups of farms based on value of sales: noncommercial and commercial farms (table 1). Farms with less than $40,000 in gross sales of farm products per year are generally considered to be noncommercial. Most operators of these farms have full-time off-farm employment and frequently identify themselves as doctors, mechanics, or craftsmen. The noncommercial size group can be further subdivided into those with sales of less than $10,000 per year and those with sales of $10,000 to $39,999 per year. Farms with sales of less than $10,000 are often characterized as hobby, lifestyle, or

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[1]Italicized numbers in brackets identify literature cited in the References.

retirement farms with small agricultural enterprises. Farms with sales of $10,000 to $39,999 tend to be slightly larger operations upon which the household depends for some, but not most, of its income. These farms are often characterized as part-time or part-retirement farms, but they may also include farms of some entering operators who wish to expand to full-time commercial status. As a group, noncommercial farms are 72 percent of all farms but produce only about 10 percent of total farm sector output.

Commercial farms are those with gross sales of $40,000 or more. These farms usually require at least one person providing full-time labor although some operators at the lower end of the size range may also work part-time off-farm. We can further subdivide commercial farms into those with gross farm sales of $40,000 to $249,999, $250,000 to $499,999, and $500,000 or more. Although most U.S. farms are operated as a single household proprietorship business, farms with $500,000 or more in sales have turned more and more to the corporate form of organization (37.2 percent). Some nonfamily corporations involved in farming are represented among the very large farms. There were only 7,140 nonfamily corporate farms in 1982, one-third of 1 percent of all U.S. farms (see also [5] for a listing of these farms by State, type of farm, sales, and value of assets owned). As a group, commercial farms account for about 28 percent of all farms but produce 90 percent of all farm output.

Farms, Production, and Income, 1985

Numbers of farms and value of production are concentrated at opposite ends of the size scale (table 1). Nearly 50 percent of all farms are very small, with sales of less than $10,000, but they account for only 3 percent of total agricultural production. At the other end of the scale, slightly over 1 percent of the farms are very large farms, but they account for over

Table 1—Farm numbers, production, and income sources of farms by sales class, including farm households, 1985

Item	Noncommercial farms with gross farm sales of—		Commercial farms with gross farm sales of—		
	Less than $10,000	$10,000-$39,999	$40,000-$249,999	$250,000-$499,999	$500,000 or more
			Number		
Farms	1,164,000	473,000	544,000	66,000	27,000
			Percent		
Share of all farms	51	21	24	3	1
Share of total farm production	3	7	41	17	32
			Dollars per farm		
Farm business income measures:					
Average farm product sales[1] (plus)	3,720	23,258	109,081	372,157	1,803,950
Average direct Government payments (equals)	85	1,340	8,292	21,783	37,499
Average gross farm business income (minus)	3,805	24,598	117,373	393,940	1,841,449
Average farm product expenses (equals)	10,621	30,089	103,866	301,812	1,212,604
Average net farm business income (plus)	-6,816	-5,491	13,507	92,128	628,845
Farm household income measures:[2]					
Average farm inkind income[3] (equals)	4,938	4,450	5,259	7,533	11,165
Average net farm income (plus)	-1,878	-1,041	18,766	99,661	640,010
Average off-farm income (equals)	22,402	16,696	10,423	11,447	15,448
Average total household income	20,524	15,655	29,189	111,108	655,458

[1]Includes cash receipts, net Commodity Credit Corporation loans, and other farm-related income. Excludes direct Government payments.
[2]Data used in this table assume one farm household is associated with each farm business.
[3]Value of home consumption and gross rental value of dwelling.
Source: [7].

30 percent of total production. This size distribution has existed in roughly the same proportions since 1960 when the smallest half of farms, those with sales of less than $2,500, also produced only 3 percent of farm products and the largest 1 percent, those with sales of $100,000 or more, produced approximately 30 percent of production.

Average gross farm business income, which includes cash receipts from sales, net Commodity Credit Corporation (CCC) loans, other farm-related cash income, and direct Government payments, measures the gross return to the business portion of the farm (table 1). This income measure averaged from less than $4,000 for the smallest farms to $1.8 million for the largest farms.

Direct Government payments are most important for farms with sales of $40,000 to $249,999 where they amount to nearly 7 percent of gross farm business income. For both the smallest and the largest farm sizes, direct Government payments are less than 3 percent of total gross farm business income.

Gross farm business income less farm production expenses gives net farm business income. Production expenses include cash outlays for feed, seed, fertilizer, interest, and other business expenses as well as depreciation, accidental damage, and perquisites to hired labor. Net farm business income varied from a loss of $6,816 for the smallest farms to a gain of over $600,000 for the largest farms.

In addition to net farm business income, most farms provide the operator household with a dwelling and some products which are consumed at home (for example, food and fuel wood). This inkind income equals the sum of the imputed gross rental value of the dwelling plus the value of home consumption. Inkind income ranges from about $5,000 to over $11,000 among the farm size classes and is actually larger than net farm business income for noncommercial farms. It is a much smaller proportion of net farm business income for large farms.

Net farm income, as computed in ERS' aggregate farm sector accounts, is defined as net farm business income plus inkind income. Net farm income is negative for noncommercial farms and increases to very high levels for the largest commercial farms. However, this income may be split between two or more households for some farms in the larger groups.

Almost all farm households report some off-farm income, either as earnings from an off-farm job or business or as interest, dividends, or transfer payments. Earned income is the largest source of off-farm income on all sizes of farms. Noncommercial farm households generally have more off-farm income than do commercial farm households; for these smaller farms, such income both provides for family living expenses and offsets farm losses. Average total household income is $20,500 or less for noncommercial farms and increases substantially for larger commercial farms. On average, operators of large commercial farms have substantial household incomes when compared with the national average of $29,066 (excluding inkind income) for all U.S. households in 1985.

Direct Government payments are an important source of household income on some commercial farms. They constitute 28 percent of the total household income of farms with sales of $40,000 to $249,999 and 20 percent of the total household income of farms with sales of $250,000 to $499,999. The largest class of commercial farms averaged over $37,000 in Government payments, but Government payments accounted for only 6 percent of their household income. Government payments are less significant as a proportion of total household income for the noncommercial farms, 9 percent for the $10,000 to $39,999 sales class and 0.4 percent for the less than $10,000 sales class.

Farm Balance Sheet, 1985

Asset and debt information about the farm sector is important because farming is a capital-intensive business. Thus, returns to capital in farming should be adequate to maintain a capital stock sufficient to meet domestic and export food needs. Wealth is also an important component of household well-being. We will examine the returns to capital and the wealth position of farm households in some detail before assessing the overall well-being of farm households in relation to the general population.

The wealth of a farm business is measured by its balance sheet. Balance sheets contrast the amount of money the operator household has invested in the business versus the amount owed to creditors (table 2). Total assets per farm range from about $120,000 for the smallest group to more than $4.2 million for the largest class. Although some individual operator households do not hold any debt, as a group, household equity in the farm business ranges from about 88 percent for the smallest farm group to about 62 percent for the largest group.

The balance sheet is commonly summarized by a debt/asset ratio, one of the primary measures that

determines whether a business is likely to have cash-flow difficulties. At current prices, input costs, and asset values, most farms start having difficulties meeting principal payments if their debts exceed 40 percent of their assets. Although some individual farms are having financial problems which partly stem from having high debts in relation to their assets, the average debt/asset ratio for each group is less than 40 percent. Commercial farms have higher debt/asset ratios than noncommercial farms, and the debt/asset ratio generally increases as farm size increases. This conclusion is consistent with other research showing that current farm financial difficulties affect commercial farms more than noncommercial farms [9].

Very large farms, despite having higher debt/asset ratios, averaged over $2.6 million in net equity out of a total value of owned assets of nearly $4.3 million. Average equity of commercial farms has been declining each year since 1981, with average declines over the period of up to 30 percent. The smallest farms, by contrast, maintained their equity through 1983, then declined about 13 percent in 1984 and 7 percent in 1985, reflecting the relative geographic location of commercial and noncommercial farms. Over half of all commercial farms are located in the North Central region where declines in farmland values have been the greatest [3,9].

Rates of Return

We used two measures of rate of return in this analysis: the farm business rate of return to equity and the farm household rate of return to annual expenditures.

The rate of return to equity, the more common of the two, measures the farm business returns to the owner's equity capital invested in the business. Net returns to operator's capital are calculated by subtracting imputed returns to unpaid operator and family labor and management from net farm business income. The rate of return to equity is the ratio of returns to operator's capital to total equity. This rate is strictly a business rate of return and should be compared with rates of return measured for other classes of investment such as stocks or bonds. In addition, farm businesses can also accrue real capital gains or losses and tax benefits or costs as part of their expected returns on investment. Comparisons using inflation-corrected, after-tax measures of returns to equity essentially address the longrun question, "What should I invest my capital (business wealth) in to get the most benefit after taxes?"

The second measure, the rate of return to annual expenditures, is more specifically tailored to the farm sector. It recognizes the farm as a combination of a firm (which produces farm business income) and a household (which receives farm household income, benefits from sheltering current income from taxation, and expects real capital gains). It addresses the shortrun question, "How should I spend my annual family income to get the most after-tax benefit?" It does not consider the possibilities of disinvesting in farm assets and reinvesting in other assets, which are longrun decisions for which rates of return to equity are the appropriate guide.

Table 2—Balance sheet of average farms by sales class, including farm households, 1985

Item	Noncommercial farms with gross farm sales of—		Commercial farms with gross farm sales of—		
	Less than $10,000	$10,000-$39,999	$40,000-$249,999	$250,000-$499,999	$500,000 or more
			Dollars per farm		
Average total assets per farm	119,295	269,567	668,512	1,816,107	4,284,522
Real estate	82,950	191,882	464,971	1,288,810	3,010,694
Nonreal estate	27,582	64,490	170,899	409,729	881,937
Financial	8,763	13,195	32,642	117,568	391,891
Average total liabilities per farm	14,321	44,933	161,656	521,453	1,636,610
Real estate	8,893	24,948	83,700	257,424	761,066
Nonreal estate	5,428	19,985	77,956	264,029	875,544
Average equity per farm	104,974	224,634	506,856	1,294,654	2,647,911
			Percent		
Debt/asset ratio	12.0	16.7	24.2	28.7	38.2

Source: [7].

Farm Business Rate of Return to Equity. The first rate of return measure strictly considers the farm business and is composed of current realized net returns to the operator's equity in the farm business, adjusted for income taxes, plus expected real capital gains income, minus the contingent liability for future capital gains tax on owned assets.[2] Real capital gains (the change in value of farm assets less real investment, corrected for changes in the Consumer Price Index) have been a substantial portion of the returns to farm operators over the years (table 3).

[2]Estimates of contingent liability for future capital gains tax were made prior to passage of the Tax Reform Act of 1986. This law eliminated the capital gains exclusion, thus making all capital gains subject to Federal income tax at the same rates as ordinary income. Our estimates of total expected real after-tax return to operator equity are now overstated because the 1986 law increased the contingent capital gains tax liability.

A strong cyclical tendency is evident in these rates of return, indicating that some periods are more favorable for investing in farm assets than others. From 1960 to 1985, real rates of return to equity averaged 2.4 percent, while real returns to owned farm assets were 1.5 percent. The rate of return during 1960-71, a period of relatively stable farm prices and incomes, was 2.2 percent for total assets and 3 percent for equity. During 1972-80, when weather and economic conditions favored U.S. farming, the rate of return to both total assets and equity more than doubled to 5.9 percent and 8.3 percent, respectively. If farmers formed new expectations of future capital gains based on these higher returns and these returns were competitive with expected returns from alternative nonfarm investments, then farmers and other investors would increase their investments in farming. That situation happened during the 1970's

Table 3—Real capital gains rates of return to total farm assets and equity in farm assets, excluding farm households, 1960-85

Year	Real capital gains	Total value of farm assets	Rate of real capital gains return to assets	Equity in farms' assets	Rate of real capital gains return to equity
	Billion dollars		*Percent*	*Billion dollars*	*Percent*
1960	0.3	174.7	0.2	150.1	0.2
1961	6.9	182.6	3.8	150.9	4.6
1962	5.7	190.3	3.0	156.7	3.6
1963	4.6	197.9	2.3	161.6	2.9
1964	7.2	205.5	3.5	166.5	4.3
1965	12.0	221.4	5.4	171.8	7.0
1966	7.3	234.1	3.1	184.2	4.0
1967	5.0	246.1	2.0	193.8	2.6
1968	3.8	259.3	1.5	202.6	1.9
1969	−.7	270.5	−.2	212.9	−.3
1970	−.7	280.2	−.2	221.6	−.3
1971	13.2	303.1	4.4	229.7	5.8
1972	28.7	341.4	8.4	247.7	11.6
1973	44.0	418.9	10.5	281.2	15.6
1974	2.1	442.3	.5	350.8	.6
1975	37.9	510.1	7.4	366.3	10.3
1976	58.0	590.4	9.8	424.9	13.6
1977	27.7	656.7	4.2	493.5	5.6
1978	65.0	783.7	8.3	541.5	11.6
1979	34.1	918.1	3.7	651.8	5.2
1980	4.6	1,003.2	.5	762.9	.6
1981	−65.1	1,005.2	−6.5	832.8	−7.8
1982	−54.4	977.8	−5.6	816.3	−6.8
1983	−38.0	956.5	−4.0	774.1	−4.9
1984	−118.4	856.1	−13.8	754.0	−15.7
1985	−94.7	771.4	−12.3	657.3	−14.4
Average rates of return:					
1960-71			2.2		3.0
1972-80			5.9		8.3
1981-85			−8.4		−9.0
1960-85			1.5		2.4

Source: [7].

as total assets in farming more than doubled between 1972 and 1980. But, these new expected return levels did not materialize during the 1980's. As current returns to capital and, more important, expected future returns to capital leveled off and declined, the value of the farm sector's capital stock began to fall, generally taking the form of falling land prices. Rates of return will probably become positive again once sufficient capital has left the sector.[3]

We have calculated 1985 farm business returns for our farm sales classes (table 4). The realized net cash rates of return to equity for the larger size classes are comparable to 1985 rates of return for nonfarm investments. Farms with sales of $250,000 to $499,999 had returns near the low end of the scale (comparable to common stock dividends), and very large farms had returns that exceeded the upper end of the scale (comparable to corporate bonds) (table 5). We also calculated the contribution that direct Government program payments made to net cash rates of return to equity (fig. 1). Consistent with our earlier analysis of farm and household income, Government payments contributed the most to returns to equity of the smaller commercial farms (sales of $40,000 to $499,999).

Farm operator decisions to invest in farming depend on at least two factors in addition to current returns to equity. These factors are current income sheltered from taxation and expected real capital gains after contingent capital gains taxes. For the farming sector,

[3]Latest ERS estimates indicate that proprietor equity values fell about 22 percent between 1984 and 1986. Equity values may fall another 10 percent from 1986 levels before the longrun rate of return to equity will become positive again.

Table 4—Farm business returns to owned assets and operator equity, by sales class, 1985

Item	Noncommercial farms with gross farm sales of—		Commercial farms with gross farm sales of—		
	Less than $10,000	$10,000-$39,999	$40,000-$249,999	$250,000-$499,999	$500,000 or more
			Dollars per farm		
Gross farm business income[1]	3,805	24,598	117,373	393,940	1,841,449
Net farm business income[2]	-6,816	-5,491	13,507	92,128	628,845
Net farm business returns to operator's equity[3]	-7,090	-7,787	3,421	66,969	542,983
Operator's equity	104,974	224,634	506,856	1,294,654	2,647,911
			Percent		
1985 net return to capital as a percentage of operator's equity *(minus)*	-6.8	-3.5	0.7	5.1	20.5
Income tax payments per dollar of operator's equity[4] *(plus)*	-1.2	-.4	.7	3.2	11.9
Expected returns to operator's equity from real capital gains[5] (based on 1960-85) *(minus)*	2.4	2.4	2.4	2.4	2.4
Contingent capital gains tax as a share of operator's equity[6] (based on 1960-85) *(equals)*	1.7	1.8	2.0	2.1	2.5
Total expected real after-tax return to operator's equity[7] (based on 1960-85)	-4.9	-2.5	.4	2.2	8.5

[1]Includes cash receipts, net CCC loans, direct Government payments, and other farm-related income. [2]Gross farm business income less production expenses. [3]Net farm business income less imputed value of unpaid labor and management. Imputed value of unpaid labor derived by distributing total hours of farm labor by 1982 value of output from the 1982 *Census of Agriculture*, multiplying by the 1982 average farm wage rate and subtracting the value of hired and contract labor, then applying the 1982 distributions of total hours worked, hired labor hours, and unpaid hours to the 1985 estimate of total hours worked and multiplying by the 1985 farm wage rate. [4]Marginal tax rate applicable to average cash family income times net farm business income divided by operator's equity. Marginal tax rates by sales class are 18 percent, 18 percent, 25 percent, 45 percent, and 50 percent from smallest to largest. [5]From table 3. [6]Based on tax rates before the passage of the Tax Reform Act of 1986; 20 percent of expected nominal capital gains rate divided by equity/asset ratio. Assumes all farms will be in the 50-percent marginal tax bracket at the time of sale of the farm assets, and that the 60-percent individual capital gains exclusion applies. [7]Sum of above; the average after-tax rate of return to equity from current income and real capital gains (based on 1960-85).

real capital gains to equity have averaged 2.4 percent over the last 26 years. For individual farmers, decisions to invest depend in part on how long they expect to continue farming. Estimates based on 1985 conditions show total expected real after-tax returns to operator equity were negative for noncommercial farms, nearly zero for farms with sales of $40,000 to $249,999, and positive for the two largest farm groups (table 4).

Real interest rates were high in 1985, making debt investments much more favorable than equity investments in farming and other sectors of the economy. If longer term average returns to nonfarm investments were compared with farm investments made with expectations of real capital gains exceeding 8 percent (such as in 1972-80), then all farm sizes would show positive rates of return and the larger farm sizes would have returns fully comparable to those of nonfarm investments.

Table 5—Rates of return on selected nonfarm investments, 1985

Investment	Percent yield
Domestic corporate bonds (Moody's)	12.05
Domestic municipal bonds (Standard and Poor's)	10.75
U.S. Treasury bonds	9.18
Common stock dividends (Standard and Poor's Composite)	4.25
Preferred stock dividends (10 high grade)	10.44

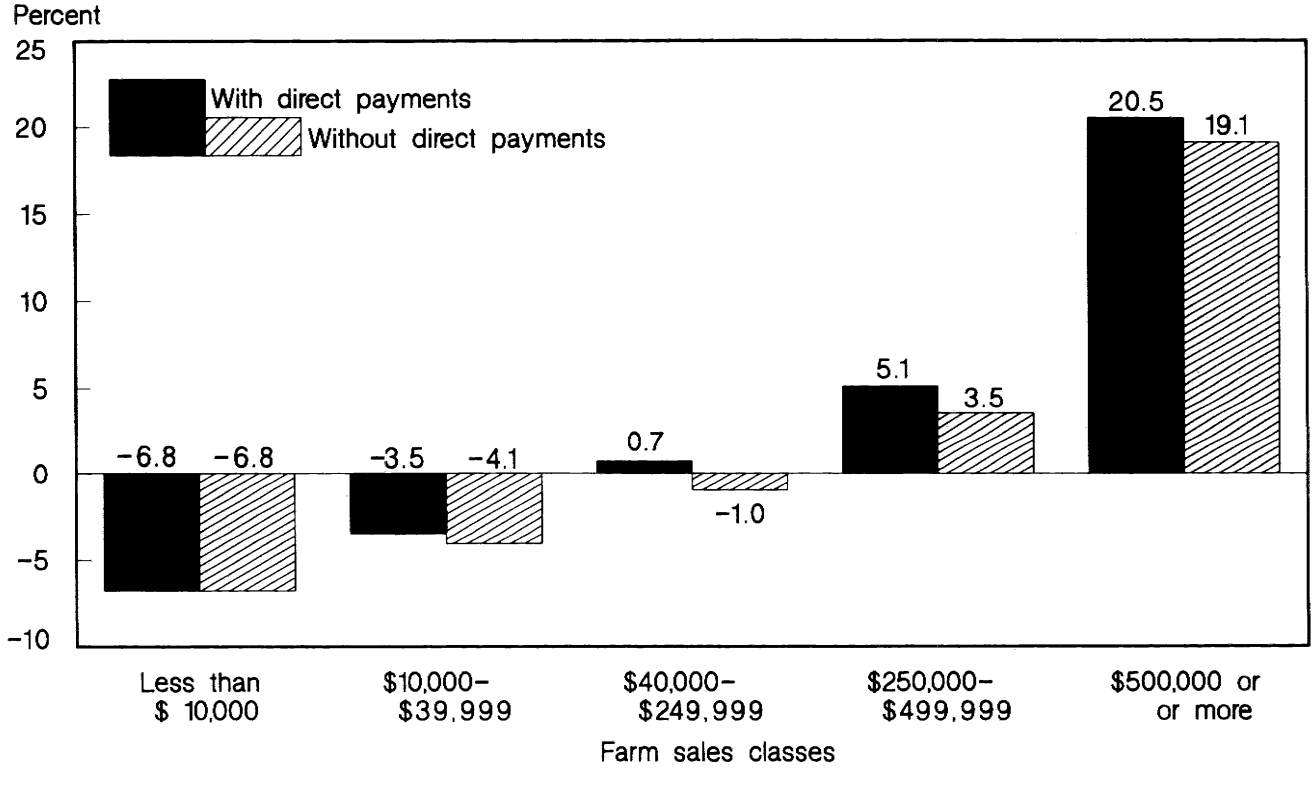
Source: [13].

Farm operators and other investors find that longrun decisions on whether to invest further in agriculture or to disinvest and reinvest in another industry depend crucially on the costs of making the adjustment as well as the expected future rates of return in farming. Thus, farm operators will frequently stay in business with low rates of return to equity because farming is the best alternative available to them given their adjustment costs or their expectation for future recovery of rates of return in farming or both.

Farm Household Rates of Return to Annual Expenditures. The second measure of rate of return considers both farm household income and farm business income, as do the gross and net farm income estimates published by ERS. This shortrun analysis of rates of return to annual expenditures shows that noncommercial farms return 82-97 cents in gross farm income for each dollar of annual farm production expenditures (table 6). Returns from sheltering current income from taxation add another 12 cents for farms

Figure 1

Net Return to Capital as a Percentage of Operator's Equity With and Without Direct Government Payments, 1985



with sales of less then $10,000 and 3 cents for farms with sales of $10,000 to $39,999. Expected real capital gains after contingent capital gains tax liability add a further 19 cents to the smaller noncommercial farms and 14 cents for large noncommercial farms. Thus, operators of noncommercial farms can expect returns of $1.13-$1.14 per dollar spent. For the larger commercial farms, gross farm income returns are larger but expected real after-tax capital gains are smaller, and income taxes are deductions from rates of return rather than additions to them.

These results show that, on a current expenditure basis, all farm sizes are returning positive and similar average rates of return, although the proportion that is realized through the marketplace is highest for the very large farms. The noncommercial farms derive much more of their income from expected real capital gains and savings on income taxes from writing off farm losses against off-farm income sources. This analysis shows that average farm households, in making shortrun decisions about operating their farms for another year, face similar, positive returns per dollar of annual expenditures, regardless of the sizes of their farms (table 6).

Summary

Most U.S. farms are noncommercial and produce relatively little of the total U.S. food and fiber. As a group, these farm businesses operate at a loss even after one considers the value of inkind farm income. Much of the economic incentive for noncommercial farms to continue operating is their expected real capital gains and income tax savings from writing off farm losses against nonfarm income sources. A relatively few commercial farms produce the bulk of U.S. food and fiber. As a group, they operate at a profit and earn rates of return comparable to investments in the nonfarm sector. Government payments are important in helping commercial farms operate at a profit and earn favorable rates of return. In recent years, real returns to operator's equity has been negative, resulting in declining values of both total assets and operator's equity in the farm sector. This financial adjustment has not been uniform by size, type, or location of farms.

The Economic Well-Being of Farm Households

To compare average farm-operator household income with that of all U.S. households, we must adjust farm household income to make the definition of income conceptually consistent with income information available for all U.S. households.[4]

[4]The Bureau of the Census publishes income information only on households residing on farms and for households headed by a person who is a farmer or farm manager as the primary occupation. The concept of a farm operator who owns, works on, and manages a farm is unique to the USDA data systems.

Table 6—Farm household rates of return on annual expenditure, by sales class of farm, 1985

Item	Noncommercial farms with gross farm sales of—		Commercial farms with gross farm sales of—		
	Less than $10,000	$10,000-$39,999	$40,000-$249,999	$250,000-$499,999	$500,000 or more
			Ratio		
Gross farm income per dollar of annual expenditures[1]	0.82	0.97	1.18	1.33	1.53
(minus)					
Income tax payments per dollar of annual expenditures[2]	−.12	−.03	.03	.14	.26
(plus)					
Expected real after-tax capital gains per dollar of annual expenditures (based on 1960-85)[3]	.19	.14	.09	.08	.04
(equals)					
Expected real after-tax returns per dollar of annual farm expenditures (based on 1960-85)[4]	1.13	1.14	1.24	1.27	1.31

[1]Gross farm income includes gross farm business income plus farm inkind income. [2]The marginal tax rate applicable to the average family cash income times the net farm business expenses per farm. Marginal tax rates by sales class are 18 percent, 18 percent, 25 percent, 45 percent, and 50 percent from lowest to highest farm size classes. [3]Historic rate of return to owned assets from real capital gains adjusted for contingent capital gains tax (before the Tax Reform Act of 1986) times total value of owned assets divided by average farm production expenditures under assumptions used in table 4. [4]Sum of annual income after taxes plus real capital gains per dollar of annual farm production expenses.

The income measure used by the Bureau of the Census is cash income; the Bureau does not have time series estimates of inkind income for U.S. households. Thus, we have subtracted the estimated value of farm household inkind income and inventory adjustments from USDA estimated average farm household income to make the USDA estimate closer to the cash income concept.[5]

Average farm-operator household income was below that for all U.S. households during the 1960's as reflected by the ratio of farm household income to U.S. household income (table 7). Between 1972 and 1978, the ratio fluctuated considerably, but farm household income exceeded U.S. household income each year except 1977. Since 1979, growth in average farm household income slowed in relation to that for all U.S. households such that the ratio has returned to levels similar to those of the mid-1960's.

The distribution of household income among farm size classes and equity classes for 1984 provides another perspective for assessing the well-being of family farms.[6] ERS recently instituted an annual FCRS which provides data on the income and equity of a sample of about 13,000 farms. The 1984 FCRS sample represents 1.69 million farms, out of an official count of 2.38 million farms. The undercount of about 700,000 farms is most obvious in the smallest sales classes, but the commercial-size classes are quite accurately represented.

ERS researchers cross-classified farm-operator households by total household income and gross farm sales (table 8). The total household income classes used in this analysis are similar to those used by the Bureau of the Census for all U.S. households except that we have reduced the number of classes to assure an adequate number of FCRS observations in each class. There is a strong positive correlation between farm size and total farm-operator household income. This correlation is reflected by the higher proportion of farm-operator households with incomes of $25,000 or more as farm size increases.[7] About one-fifth of all farms except the smallest had negative total household net incomes in 1984. We do not know how many of these households have had persistently negative total net incomes from year to year or how many have had temporary lapses into negative incomes which will correct themselves.

The economic well-being of farm families can be measured by both their family incomes and their equity or net worth in their farms. We compared the 1984 net worth of farm households with those for all U.S. households and for U.S. households with business equity. Data for farm households come from the 1984 FCRS. Data for U.S. households and U.S. households with business equity come from the September to December 1984 Survey of Income and

Table 7—Comparison of farm-operator households' income and U.S. households' income, 1960-85

Year	Average adjusted USDA farm-operator income[1]	Average U.S. household money income[2]	Ratio of farm income to U.S. household income
	Dollars		*Percent*
1960	4,053	6,627	61
1961	4,568	6,471	71
1962	4,902	6,670	73
1963	5,286	6,998	76
1964	5,689	7,336	78
1965	6,344	7,704	82
1966	7,523	8,395	90
1967	7,177	7,989	90
1968	7,850	8,760	90
1969	9,010	9,544	94
1970	9,472	10,001	95
1971	9,823	10,383	95
1972	12,328	11,286	109
1973	17,854	12,157	147
1974	18,204	13,094	139
1975	15,694	13,779	114
1976	16,463	14,922	110
1977	14,866	16,100	92
1978	17,955	17,730	101
1979	18,782	19,554	96
1980	18,435	21,063	88
1981	17,411	22,787	76
1982	19,302	24,309	79
1983	20,127	25,609	79
1984	21,916	27,464	80
1985	26,644	29,066	92

[1]Defined as USDA total farm-operator household income from all sources less the gross rental value of the farm dwelling, value of food produced and consumed on the farm, value of inventory change, and wages paid to the operator and members of the operator's household.

[2]For 1960-66, data were available for families only. For 1967 forward, data are for households.

Source: [1] adjusted for 1985 information in [7].

[5]Nonfarm households also have significant inkind income such as implicit rental value of owner-occupied housing, insurance coverage provided by employers, use of company-owned vehicles, and Government vouchers such as food stamps. Although some studies have attempted to estimate the value of these inkind income sources, there are no systematic annual estimates of inkind income for nonfarm households analogous to estimates available for farm households.

[6]This discussion is based on an analysis in [2]. We did not have similar data for 1985.

[7]FCRS assumes one farm household for each farm business. Thus, some household incomes reported for larger farms may be overstated. We do not believe that this data problem seriously alters the general conclusion stated here.

Program Participation as reported by the Bureau of the Census [12]. We adjusted the published Census monthly income to annual equivalents and retabulated the 1984 FCRS data using these new income catagories. Farm household income again includes only cash or money income reported for 1984. Farm household net worth reflects only the equity in the farm business; data for all U.S. households include all asset categories except equities in pensions, cash surrender value of life insurance policies, or the value of jewelry and home furnishings. Thus, the net worth of farm households used here understates their true net worth positions.

The median net worth of farm-operator households in 1984 greatly exceeded that of all U.S. households and is over twice that of U.S. households with business equity (table 9). Two factors contribute to this result. First, farming today is a highly land- and capital-intensive business; land is the major component of the farm asset base with its value being determined by both expected income and rate of return. Second, farm households, particularly those operating sole proprietorship businesses, typically use credit to acquire the use of capital and land. The structure of credit and other institutions results in forced savings by sole proprietorship businesses (which most farms are) because farmers must meet both interest and principal payments. By meeting annual principal payment obligations, farm households are forced to enhance their net worths.

The relationship between household income and net worth both for all U.S. households and for farm

Table 8—Cross-classification of farms by total household income and size class, 1984

Sales class	Total household income class					Total by income class
	Negative net income	$0-$9,999	$10,000-$24,999	$25,000-$59,999	$60,000 or more	
	Percent					Number
Less than $10,000	12	25	32	27	3	713,376
$10,000-$39,999	18	19	32	27	4	393,383
$40,000-$249,999	18	9	19	35	19	500,625
$250,000-$499,999	19	3	6	16	56	62,092
$500,000 or more	17	1	3	10	69	24,465
All farms	15	18	27	28	11	1,693,940

Source: [2].

Table 9—Distribution of household net worth for farm-operator households and all U.S. households by total household money income, 1984

Annual equivalent income	Number of households	Household net worth of—				Median net worth
		Less than $100,000	$100,000 to $249,999	$250,000 to $499,999	$500,000 or more	
	Thousands	Percent				Dollars
All U.S. households[1]	86,790	78.8	15.3	4.0	1.9	32,667
Less than $10,800	22,297	92.5	6.2	1.0	.3	5,080
$10,800 to $23,988	26,599	83.8	13.6	2.1	.5	24,647
$23,989 to $47,988	27,173	75.8	18.3	4.6	1.3	46,744
$47,989 or more	10,720	45.2	31.0	13.4	10.4	123,474
U.S. households with own business equity[1]	11,196	54.5	26.1	11.8	7.6	89,084
Farm operator households[2]	1,694	38.9	33.6	16.4	11.1	189,542
Less than $10,800	654	45.4	32.5	13.8	8.3	121,231
$10,800 to $23,988	399	47.7	34.7	13.3	4.3	109,942
$23,989 to $47,988	384	33.9	39.5	18.5	8.1	161,139
$47,989 or more	257	16.7	26.1	24.9	32.3	322,289

[1]Calculations are based on information found in [12]. [2]Special tabulations from the 1984 Farm Costs and Returns Survey. We adjusted the monthly incomes reported by the Bureau of the Census to annual equivalents and used the new money income categories for the tabulations. Farm operator household income reflects only cash income from both farm and nonfarm sources.

households is positive. That is, as household income increases, household net worth increases, and vice versa (table 9). Two general relationships emerge from these data. A higher proportion of farm-operator households had lower money income in 1984 in relation to the general population. For example, about 25 percent of all U.S. households had money incomes of less than $10,800 compared with about 39 percent for farm-operator households. But at the same time, the net worth of farm-operator households is higher at all income levels, indicating lower money income but higher net worth. Nonetheless, the proportion of farm-operator households and U.S. households is the highest income class are about the same. The highest income group among farm-operator households (15 percent) owns about 31 percent of all farm business equity. For all U.S. households, the top income group (about 12 percent) owns 38 percent of all households' net worth. The median net worth of farm-operator households in the highest income group is 2.6 times that for all U.S. households in the highest income class.

The positive relationship between farm size and total household income, along with the positive relationship between total household income and farm equity, confirms that total household income, equity levels, and sizes of farms all tend to increase or decrease together as measures of economic well-being. With declining farm asset values since 1980 in most areas of the country, farm equity has been squeezed more than proportionately because households in many cases have not been able to reduce their liabilities. Thus, their net worths have declined by nearly the full amount of the changes in the value of assets.

Farm households with negative total household incomes generally had large farm business losses and relatively small off-farm incomes in 1984 (table 10). For households with positive total household income, both farm-related income and off-farm income increased as total income increased. Except for the highest income group, off-farm income exceeded farm-related income. Very high income households combined very favorable farm business income with high off-farm incomes.

Farm Households in Financial Stress

Farm financial stress has been intensifying since 1981 in many parts of the country. While a few farm households, primarily those on large farms with substantial farm equity, have relatively high household incomes, some households have found themselves with low income and little equity since 1981, threatening their ability to continue farming. Using limited data recently available from the 1985 FCRS, we have identified those households with negative cash-flow from all sources and with debt/asset ratios of 40 percent or more (table 11). These households are most likely to leave farming for financial reasons as a result of the current financial adjustment. These households could not meet their current financial obligations during 1985 and had substantial farm

Table 10—Income sources of farm households by total family income class, 1984

Item	Total household income class				
	Negative net income	$0-$9,999	$10,000-$24,999	$25,000-$59,999	$60,000 or more
			Dollars		
Farm-related income	-41,988	486	5,134	15,282	101,683
Farm business	-52,446	-5,039	-1,422	5,798	77,930
Farm inkind	7,911	4,960	5,679	7,768	16,743
Government payments	2,547	565	877	1,716	7,009
Nonfarm income	4,274	4,737	12,076	22,400	46,340
Wages and salaries	1,887	1,990	7,452	15,397	10,591
Business and professional	877	772	1,221	2,966	24,163
Wages from other farms	131	165	227	134	84
Other off-farm[1]	1,379	1,859	3,175	3,903	11,502
Total household income	-37,714	5,223	17,209	37,682	148,023
			Percent		
Share of all farms	15	18	27	28	11

[1]Includes interest, dividends, rents, transfers, and other unearned income.
Source: Farm Costs and Returns Survey, 1984.

debt in relation to the current values of their assets on January 1, 1986.

Approximately 11 percent of all farm households had negative cash-flow during 1985 and had debt/asset ratios of 40 percent or more on January 1, 1986 (table 11). The incidence of financial stress is highest among the younger operators, those most likely to have recently entered farming. Over 20 percent of operators under 35 years old reported economic conditions indicating financial stress, compared with about 7 percent of the operators age 55 and older. The incidence of financial stress is highest among commercial farms, particularly the smaller commercial farms (with sales of $40,000 to $249,999), dairy and cash grain farms, and farms in the Lake States and Northern Plains. Land values have dropped sharply in these two regions in recent years.

Summary

Growth in farm-operator households' income slowed in the early 1980's in relation to that of all U.S. households. As a result, the ratio of farm household income to U.S. household income has returned to approximately the 80-percent range experienced in the mid- to late 1960's. About 15 percent of all farm-operator households and 20 percent of all commercial farm households reported a negative total income in 1984, mostly the result of large farm business losses and small off-farm incomes. Most of those with negative total incomes also had low equity indicating that large farm losses could not be sustained over a long period of time, particularly during the present period of declining farm equity. Recent data suggest that about 11 percent of U.S. farm households face financial stress such that they might exit farming for financial reasons. Commercial farms, dairy and cash grain farms, and farms in the Lake States and Northern Plains are particularly affected by financial stress.

Issues Facing the Farm Sector

In what state will the U.S. farm sector survive its economic difficulties? What will be the effects on rural communities that depend largely on farming? Answers to these questions are difficult at best. In this section, we examine a number of policy issues related to the current circumstances of the farm sector and farming communities.

Declining Farm Asset Values

Farm asset values have been declining since 1981 in most parts of the country. The most dramatic declines have been in farmland values (fig. 2). In some parts of the Upper Midwest, land values have

Table 11—Farms with high debt/asset ratios and negative cash-flows, by farm sales, type of farm, region, and age of operator, January 1, 1986[1]

Sales class	Share with financial stress	Type of farm	Share with financial stress	Region[2]	Share with financial stress	Age of operator	Share with financial stress
	Percent		*Percent*		*Percent*		*Percent*
$500,000 or more	14.0	Dairy	20.2	Lake States	19.8	Less than 35	22.3
$250,000-$499,999	14.8	Cash grain	13.3	Northern Plains	17.1	35 to 44	17.3
$100,000-$249,999	17.8	General crop	10.5	Mountain	12.5	45 to 54	10.9
$40,000-$99,999	17.6	Field crop	10.5	Corn Belt	11.8	55 to 64	6.6
$20,000-$39,999	11.8	Vegetable, fruit, nut	9.8	Delta	11.7	65 and over	7.2
$10,000-$19,999	10.8						
Less than $10,000	4.4	General livestock	8.3	Southern Plains	7.9	All ages	11.1
		Poultry	8.0	Pacific	7.9		
All sizes	11.1	Other livestock	7.8	Southeast	7.8		
		Nursery and greenhouse	2.1	Northeast	6.6		
				Appalachia	5.7		
		All types	11.1	All regions	11.1		

[1]Farm households in financial stress have debt/asset ratios of 40 percent or more and negative cash-flow. Cash-flow is determined by deducting cash farm operating expenses, $15,400 family living allowance, and estimated principal payments from cash farm and off-farm income. Principal payments ranged from 4.1 percent of outstanding debt for farms with less than $10,000 in sales to 6.6 percent for farms with $500,000 or more in sales. We assumed that 52 percent of outstanding debt was long term in the 10th year of a 30-year repayment schedule and 48 percent of outstanding debt was intermediate term in the 3d year of a 7-year repayment schedule. [2]Northeast: ME, NH, VT, MA, CT, RI, NY, NJ, PA, DE, MD. Lake States: MI, WI, MN. Corn Belt: OH, IN, IL, IA, MO. Northern Plains: ND, SD, NE, KA. Appalachia: VA, WV, KY, TN, NC. Southeast: SC, GA, AL, FL. Delta: MS, LA, AR. Southern Plains: TX, OK. Mountain: MT, ID, WY, CO, UT, NM, NV, AZ. Pacific: WA, CA, OR.
Source: Farm Costs and Returns Survey, 1985.

fallen by nearly 60 percent since 1981, with most of the decline in 1984 and 1985. States especially hard hit include Iowa, Minnesota, Nebraska, Indiana, Ohio, and Illinois, all registering declines of more than 49 percent in nominal terms. These declines have seriously affected the creditworthiness of farmers and have, in some cases, forced farmers that had entered or expanded in the 1970's into technical insolvency. Most of the decline in farmland values was reflected in reduced net worths of operators as they could not retire their debts as fast as their asset values dropped. Asset values now are at mid-1970's levels in nominal terms and at mid-1960's levels in real terms (fig. 3).

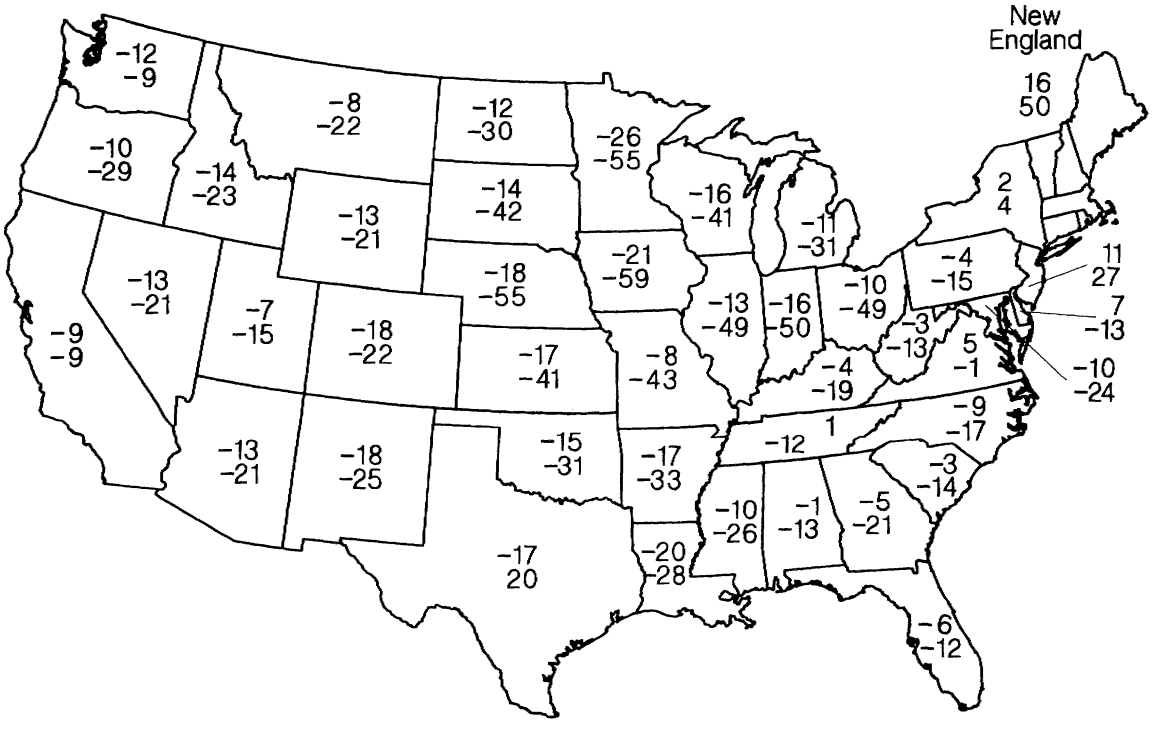
The reason farmland values dropped is not because commodity prices and farm incomes dropped in the 1980's, as many observers believe. Farm incomes average nearly the same level in nominal terms in the 1980's as they did in the late 1970's, but they have become much more volatile (fig. 4). Real net farm income, however, has dropped in the early 1980's to levels below the 1960's, but this drop does not explain declines in land values.

The primary reasons for the drop in farmland values in the 1980's lie in the reversal of several factors that had been driving land values up in the 1970's (fig. 5). These factors affect the expected future income flows to farming and how these flows are reflected in land values. Exports of farm products, for example, which had been increasing at a rate of over 8 percent per year in the 1970's, abruptly started declining in 1980. This decline was largely due to a rapid increase in the exchange value of the dollar which made U.S. farm products relatively more expensive to foreign customers. The trade-weighted value of the dollar had declined throughout the 1970's but abruptly increased to nearly double its 1979 value in the first half of the 1980's. This change, in turn, was partially the result of high real interest rates caused by a combination of tight monetary policies and stimulative fiscal policies which rapidly brought inflation under control. These policies, coupled with the deregulation of financial markets starting in 1980, rapidly raised real interest rates from their historic levels of 1-2 percent to unprecedented levels of 8-10 percent. As a result of all of these reversals, farmland values (which are strongly dependent on international market conditions, expectations for income growth, and the real cost of credit) suddenly reversed from growth to decline.

The root causes of the changes were much more conditioned by Government policies aimed at the overall

Figure 2

Percentage Change in Average Value of Farm Real Estate per Acre



Top number is change from April 1, 1985 to February 1, 1986.
Bottom number is change from February 1, 1981 to February 1, 1986.

Figure 3

Selected Indicators of Farmland Value, 1960-86

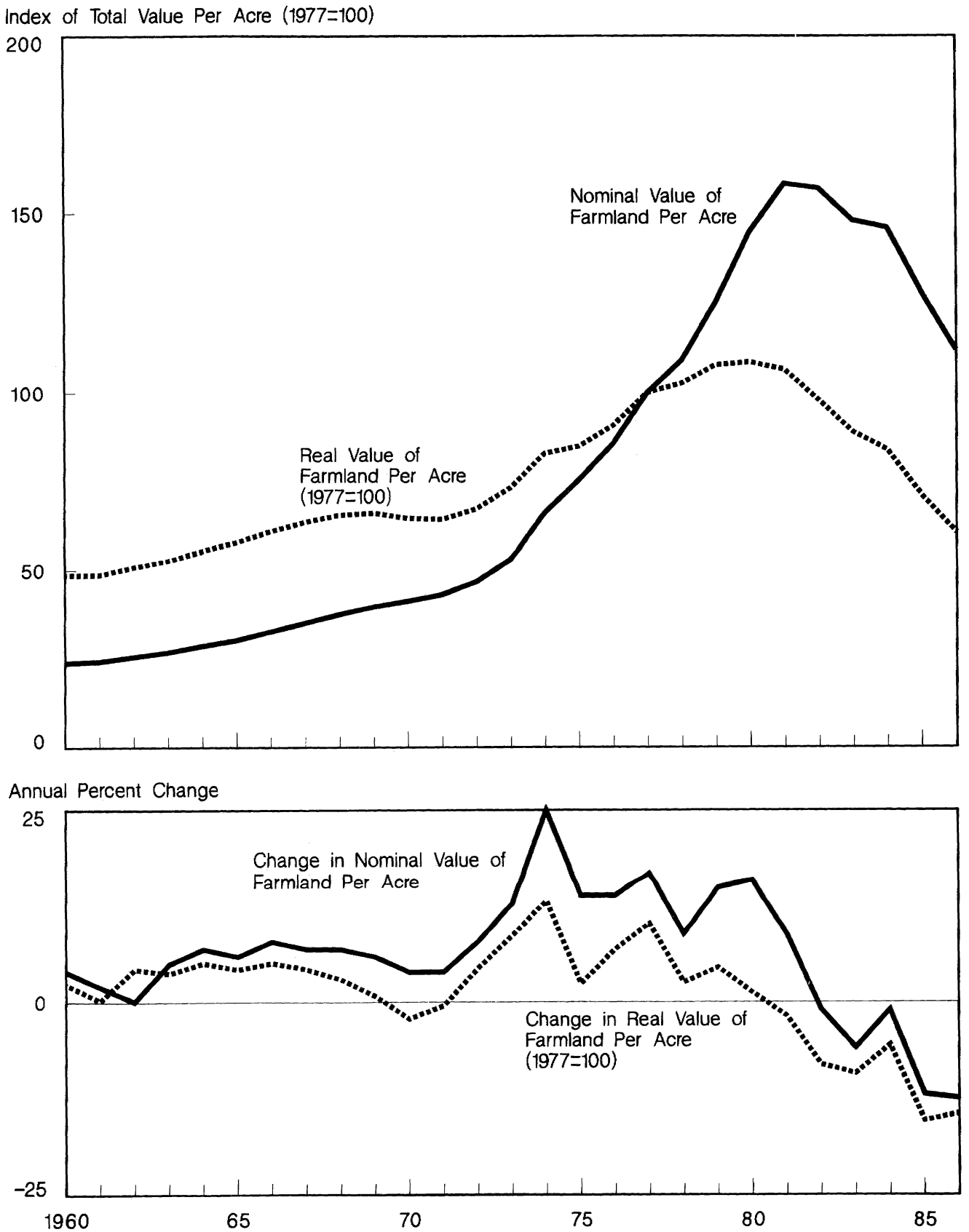
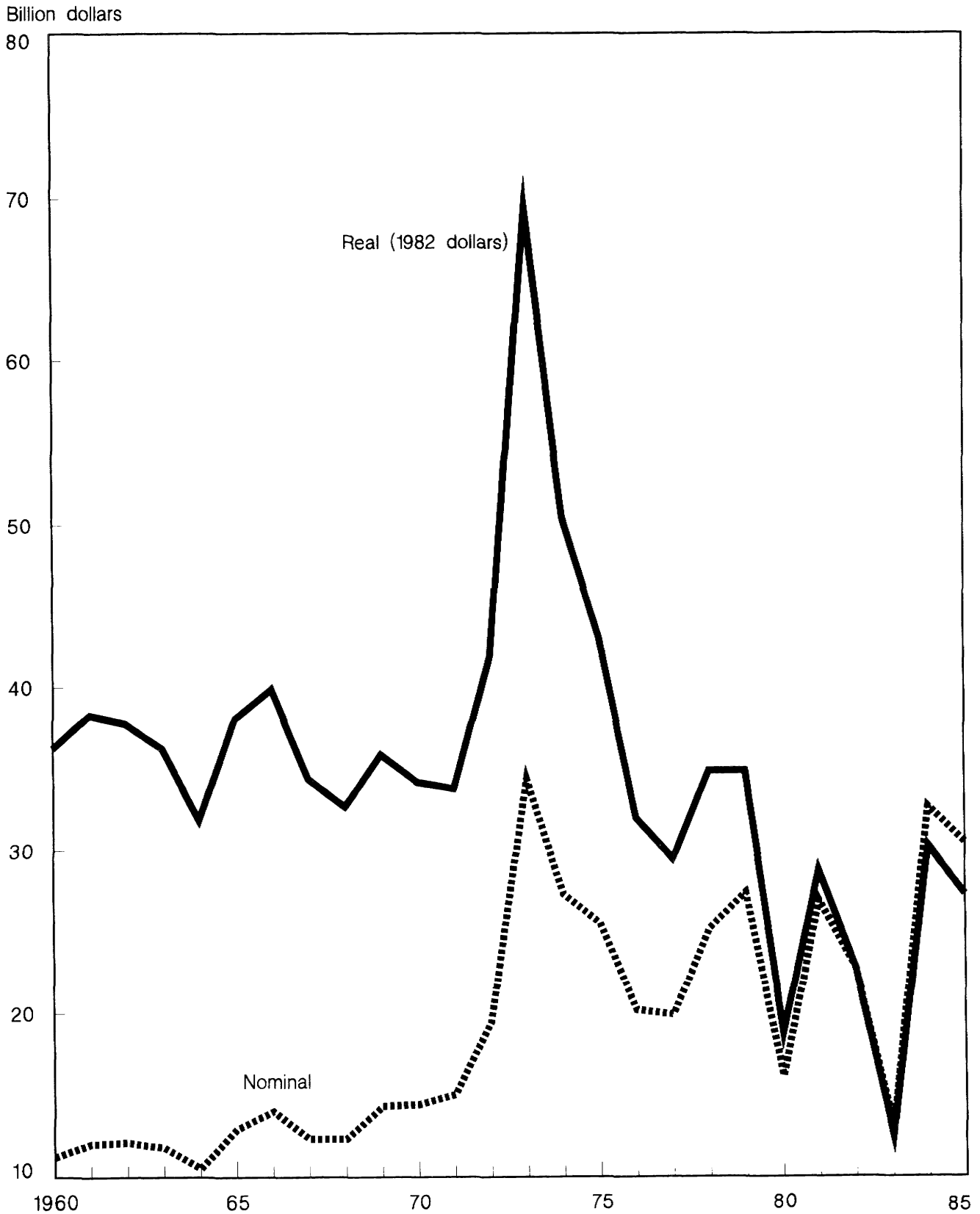


Figure 4

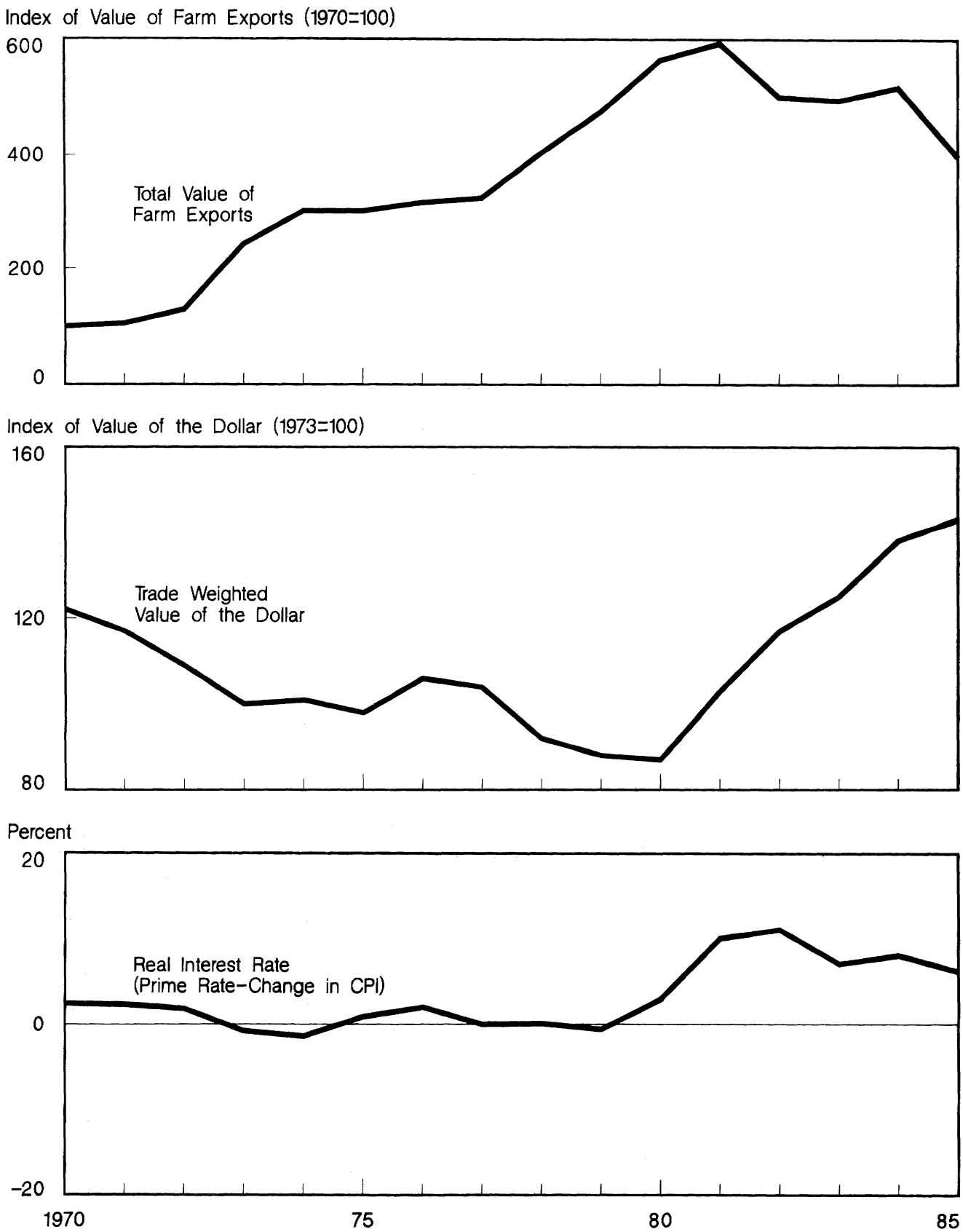
Nominal and Real Net Farm Income



1985 preliminary.

Figure 5

Selected Determinants of Farmland Value, 1970-85



economy (tight monetary policy, stimulative fiscal policy, and financial market deregulation) than they were by agricultural incomes or policies as such. Agriculture is sensitive to both the higher exchange rate and the real interest rate; thus, the effects of the individual policies were compounded. The compounded effects of those policies were manifested mainly as changes in the value of assets rather than as declines in total farm income in current dollars. In the 1980's, farm income has been supported in part by Federal commodity program loan rates based on 1970's conditions. But, the land market appears to be signalling that investors expect level or even declining real returns to farmland in the future, despite current high levels of Government payments.

With recent declines in the exchange value of the dollar and in the real interest rate, the price of farmland should strengthen somewhat. However, exchange rates for agricultural products, in relation to those of our competitors and trading partners, have not improved as much as other exchange rates. Interest rates on farm loans have not dropped as much as for some other sectors, partly because lenders perceive farm loans as increasingly risky.

Finally, a significant amount of farmland is held by lenders and by farmers in financial stress; this situation tends to overhang the market and further depress farmland prices: Thus, while interest rate and exchange rate conditions point to a strengthened land market, land values may continue to decline for another year or two in some parts of the country, but probably not as steeply as in 1984-85.

For farms that are able to retain all of their assets through the current financial adjustment, the declining farmland values represent paper losses, not actual losses. The losses are real for others who must sell some assets or who face bankruptcy or foreclosure. Others, whose access to credit is curtailed, may be forced out of business through lack of credit with which to operate their farms.

Resources Leaving the Farm Sector

Recent levels of financial stress among farm operators have raised concerns about the loss of people and resources from farming. Several issues are involved. First, who is leaving farming? Second, what is happening to their resources? Third, what does this imply for future food supplies, the future structure of farms, and the control of agriculture? Satisfactory answers for these questions are difficult because not enough is known about the most recent changes that have come along with the financial crisis.

How Many Are Leaving Farming Today? Most of the national information on farms and resources exiting the sector comes from an opinion survey of bankers maintained by the American Bankers Association (ABA). This survey provides estimates of the percentage of farms (probably thought of as commercial farms by the respondents) that have gone out of business ([6], tables 10 and 11). These data indicate that the percentage of farms going out of business and the percentage of farms going through bankruptcy have increased annually since the year ending in June 1982 (table 12).

The findings of the ABA survey are corroborated by some State-level evidence. Some States in the Midwest have conducted farm financial conditions surveys in which they asked how many farmers planned to go out of business within the next year. The results of these surveys generally indicate that 3-6 percent of the farm respondents in each State expected to go out of business in 1986, about 50 percent of them for financial reasons.

Inadequate data at the Federal level prevent our gauging the rate and composition of farms leaving the sector. The latest Census of Agriculture data cover only 1982, a year before farmers felt the full effects of financial stress. The U.S. Department of Agriculture does not have any current surveys that are constructed to trace specific farms or farmers from year to year, which would be necessary to accurately gauge who is leaving farming and what is happening to their resources. ERS' recently instituted FCRS has been conducted only twice (1984 and 1985). The FCRS is not constructed to provide data on the same farm households over time.

Table 12—Share of farms going out of business or going through bankruptcy, 1982-86[1]

Item	1982	1983	1984	1985	1986
			Percent		
Farms going out of business	2.2	2.3	3.6	4.8	6.2
Farms going through bankruptcy	.75	1.1	2.6	3.8	4.2
Why farmers are going out of business:					
Normal attrition	N/A	37.7	31.3	27.7	28.9
Voluntary liquidation	N/A	42.4	44.0	44.3	41.7
Legal foreclosure	N/A	18.1	22.3	25.8	26.3
Other	N/A	1.8	2.4	2.2	3.1

N/A = Not available.
[1]Year ending in June of the year specified.
Source: [6].

Who Is Leaving?[8] The number of persons leaving or expected to leave farming now is modest by historical standards and their characteristics are different. Some 30.5 million people lived on farms in 1940 as the Great Depression came to an end and the country entered the period of rapid economic change associated with World War II and the postwar years. The farm population represented nearly a fourth of the total national population and was just 6 percent below the 1916 peak of 32.5 million farm people. In the next 24 years, the farm population declined precipitously to just 13 million in 1964, a 57-percent loss. In half of the years in this period, over 1 million farm people each year left the farm and moved elsewhere. These numbers are incomparably larger than today's losses of farm population. The total decline during 1980-85 amounted to 700,000 persons.

The differences between today's conditions and those of the past are the reasons for the displacement of farmers and the characteristics and economic position of those who are displaced. During the rapid reduction in the number of farms and farm people in the 1950's and 1960's, the main factors leading to this reduction seemed to be mechanization and other laborsaving innovations, reduced profit margins which required farmers to increase volume of output per farm to maintain net income, and the attraction of better income-earning opportunities in urban areas. Those leaving farming were the small marginal producers or tenant farmers unable to expand their farm businesses. Today, farmers exiting for financial reasons tend to operate larger, production-efficient farms. Many of today's exiting farmers were considered progressive leaders in the farm community during the 1970's.

Past declines in the farm population were characterized by tenants leaving farming, older operators retiring, and younger persons declining to enter farming as a primary occupation. The people leaving agriculture today appear to be primarily young (less than 40 years old) and from the middle and upper-middle sectors of commercial agriculture. There are no significant differences in overall educational levels between them and the general population. Those leaving farming have useful occupational skills and entrepreneurial experience. Many of the people from farm families currently being displaced from agriculture will try to remain in their home community. Two decades ago, nonfarm job opportunities were much more limited in rural areas, and losing the farm more often led to migration from the community. That migration is less likely today except in parts of the western Corn Belt and Northern Plains, the most farming-dependent areas where nonfarm job opportunities are still relatively scarce.

Resources and the Food Supply. Changes in farm ownership will probably not curtail the food supply. The overwhelming majority of the resources of farmers leaving agriculture are purchased and remain in production, usually without even a year's break. Almost 75 percent of all land changing ownership in 1985 was purchased by continuing farmers. The remainder was purchased by retired farmers and nonfarmers who usually kept it in production as well. Some land that was marginal for crop production may revert to pasture in some parts of the country, and some land may be lost to nonfarm uses. However, these land use changes should affect a very small proportion of the total land base, generally not in the areas of greatest financial stress and farm turnover.

Farm Consolidation and Control. That continuing farmers make up the bulk of purchasers of farmland implies that production will continue to grow and be concentrated among the larger, better financed farmers. As such, farm financial stress may hit the middle strata of farmers the hardest because larger farmers tend to have better yields, profits, and financing arrangements, while smaller farmers can use their off-farm incomes to weather the storm. This situation will probably intensify the existing trend towards an increasing number of larger commercial farms, a stable number of small, noncommercial farms, and a declining number of smaller commercial farms (those with sales of $40,000 to $249,999).

Land ownership by nonfarm investors, corporations, lenders, and foreign owners is not likely to increase as a result of the current financial stress. Most recent evidence is that land ownership by nonfarm investors, corporations, and foreign owners remains extremely low and is declining. These investors were attracted largely by tax sheltering and expected capital gains returns of owning farm assets during the 1970's. The Tax Reform Act of 1986 severely limits the ability of farm investments to shelter income from taxation. With current financial stress conditions, those individuals are less eager to invest in the sector and may not foresee commercial rates of return that will entice them back into agriculture in the near future. Nonfamily corporate ownership of farmland remains low at about 1.6 percent of the total value of land and buildings in the sector. Foreign ownership is similarly low at less than 1 percent. Ownership of land by nonfarm individuals continues to be dominated by retired farmers and heirs of farmers.

[8]This section is based on information in [*10*].

Landownership by lenders is increasing due to foreclosures and voluntary transfers from farmers in financial difficulties. The full extent of landownership by lenders is not known because there are no reporting requirements for banks, insurance companies, or individual lenders. The Farm Credit System currently holds about 1 million acres in acquired properties and the Farmers Home Administration about 1.4 million acres. Each of these lenders is attempting to dispose of their holdings without further depressing the price of farmland. Their combined total holdings are less than 0.25 percent of all U.S. farmland.

Linkages to Rural Economies

The current farm financial situation is affecting many rural communities particularly in the western Corn Belt and in the Plains States. The extent to which a community is affected depends upon the role farming plays in the local economy. The impact of today's financial stress is more concentrated than in the past because of the major economic transformation that has taken place in rural America since the 1950's.

Declines in the farm population during the 1950's exceeded the growth in nonfarm employment opportunities in most areas so that displaced farmers had to migrate to urban centers to find jobs. This migration resulted in a precipitous decline in the rural population in almost all rural counties across America. By the mid-1960's, the farm population had fallen to a level where further declines were being offset by growth in nonfarm manufacturing and service jobs. The economies of many rural counties, largely in the South, were beginning to expand. Farmers no longer had to migrate to urban centers to find jobs. Many combined what they felt was the best of both worlds: part-time farming while holding a nonfarm job.

During the late 1960's and early 1970's, faster population and employment growth in nonmetro than in metro areas helped transform many rural communities. This transformation was characterized by an increase in nonfarm economic activity, displacing farming as the primary economic activity. In 1950, farming accounted for 20 percent or more of the earned income of over 2,000 counties in the contiguous 48 States (fig. 6). By the late 1970's, the number of farming-dependent counties had shrunk to about 700, concentrated largely in the Nation's heartland (fig. 7). The industrial structure of many rural areas began to resemble that of metro areas as cumulative employment increases appeared in manufacturing, construction, and service sectors.

Today's Farming-Dependent Counties.[9] Farming-dependent counties have been defined as counties having more than 20 percent of all earned income derived from farming. There are 702 such nonmetro counties (out of 2,443 nonmetro counties in the United States) (fig. 7). These farming-dependent counties are concentrated largely in the Great Plains and Corn Belt States, with lesser concentrations in the Delta and Southeast. These counties can be further broken down into thirds, based on their degree of dependence on farming. The top third depends on farming for 37 percent or more of total earnings, the middle third for 27-37 percent, and the lower third for 20-26 percent (table 13). Based on our analysis of the economies of these farming-dependent counties, we can draw the following conclusions:

- The more a county depended on farming, the more likely that county had population declines prior to 1970 or slower growth during the 1970's and 1980's than all other nonmetro counties. Almost 60 percent of the most highly dependent counties lost population in the 1970's, compared with less than 10 percent for other nonmetro counties.
- Average populations and population densities in 1980 were lower in counties that were more highly dependent on farming.
- The populations of counties highly dependent on farming tended to be older, but a larger proportion of their adult populations had finished high school.
- The more a county depended on farming, the higher its per capita income in 1980.
- Per capita direct Federal outlays in 1980 for agriculture were 10 times greater in the most highly farming-dependent counties than in nonmetro counties that were not farming dependent. Total Federal outlays per capita were only slightly greater in the most highly farming-dependent counties, $1,648, than in nonmetro counties not dependent on farming, $1,495.

In the 1980's, farming-dependent counties have continued losing population, but a larger proportion of other nonmetro counties have also started to lose population again. Economic expansion of nonmetro areas has lost some of its lustre since the late 1970's. Employment growth in nonmetro areas has slowed in relation to metro areas. This situation suggests a general weakening of economic opportunities in both

[9]This section is based on information published in [3,4].

the farm sector and the nonfarm sectors of these local economies. The worst situations appear to be confined to the Great Plains, including parts of Iowa, and the Delta, with less severe situations in the Corn Belt and the Southeast. However, we do not expect farming to again dominate the economies of most nonmetro counties. The economic future of most rural citizens is now tied more to overall national economic growth than to any one sector's performance. But for residents of farming-dependent rural counties, especially those in the sparsely settled areas of the Great Plains, their fortunes are tied very closely with the success or failure of agriculture.

Two other factors are crucially important to the effect of the farm crisis on rural communities:

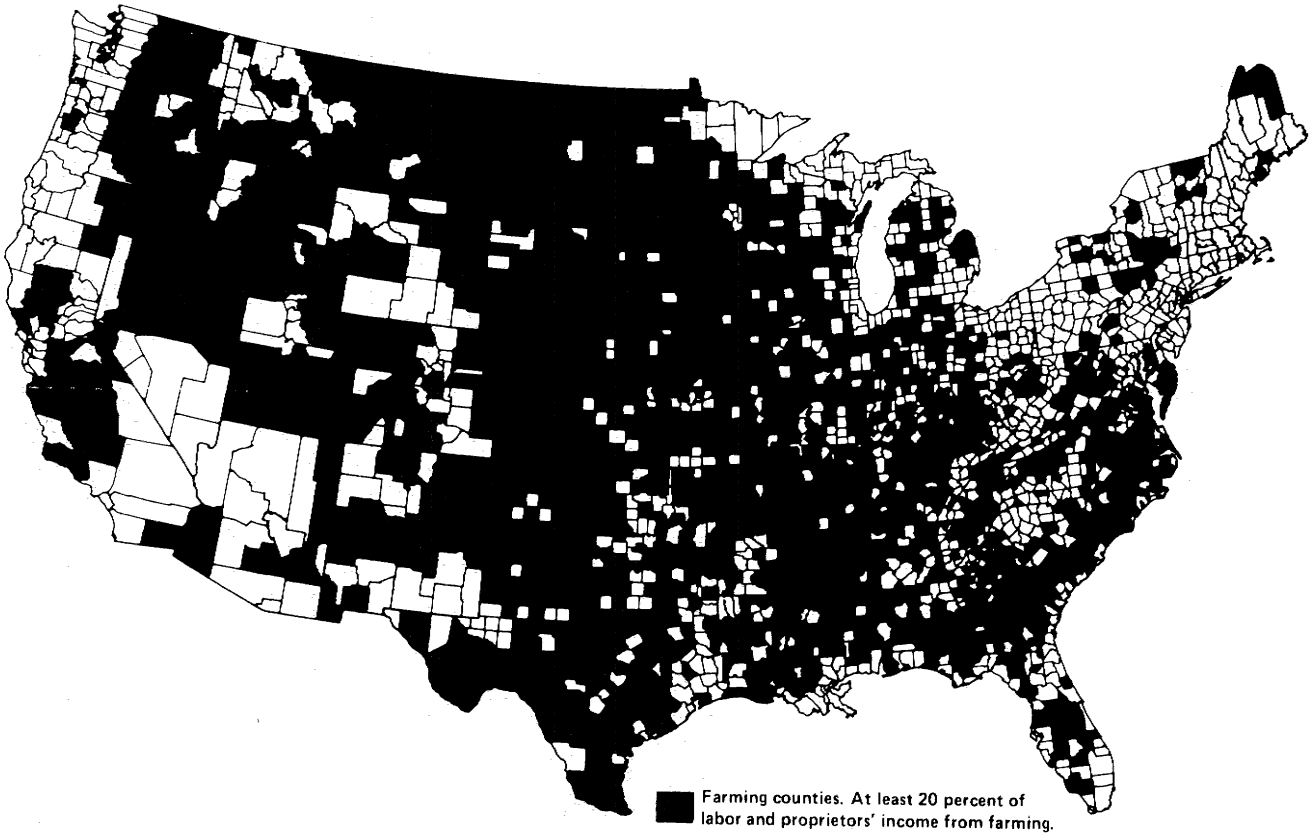
- To what extent does an area's farming depend on export commodities? These commodities have suffered the most severe reversal in their outlook and asset values.

- To what extent do local economies depend on agriculturally related employment, both directly and indirectly?

There is a strong correlation between the dependence of farm production regions on the primary export crops (corn, wheat, soybeans, and cotton) and the regions' changes in farmland value since 1981 (table 14). The Corn Belt, the Delta States, the Northern Plains, and the Lake States depend most on these export crops. These regions have suffered the sharpest declines in land values, at least partly because of the collapse of international demands for those commodities in the 1980's. But, those regions also had the highest rates of increase in land values in the buoyant 1970's.

Figure 6

Farming-Dependent Counties, 1950



Similarly, direct farm sector employment is highest in the Northern Plains, Southern Plains, Lake States, and Corn Belt (table 15). Employment in input industries and food and fiber wholesaling and retailing are also important agricultural linkages. Appalachia and the Southeast are important in the direct agricultural linkages (input, processing, and marketing industries), and the Pacific and Mountain States are important in final consumption linkages (food and fiber wholesaling and retailing). Overall, the Northern Plains, Lake States, and Southeast have the strongest agriculture-related employment. On a State-by-State basis, total employment in farming and agribusiness (the direct agricultural linkages) are strongest in North and South Dakota, Nebraska, Iowa, and Idaho (fig. 8). Again, most of these States depend greatly on exports and have experienced the severest financial stress among farms.

Summary

The financial adjustment now underway in the farm sector is indicated by a decline in the total value of farmland and other investments. Farmland values have been falling since 1981, most severely in Iowa, Minnesota, Nebraska, Indiana, Ohio, and Illinois. Declines in exports and high real interest rates brought on by policies aimed at the overall economy reduced the expected income flows to farming and affected how these flows are capitalized into land values. Although the total value of farm assets has declined, the total amount of farmland has not shrunk significantly. Thus, U.S. food supplies are not likely to be threatened. Farm operators quitting for financial reasons are generally young and have occupationally useful skills for employment in the nonfarm sector. Communities in the western Corn Belt and the Plains States will probably be affected the most by today's farm financial stress. These areas have not participated in the recent economic transformation of nonmetro America to the extent that other sections of the country have.

Implications

The U.S. farm sector is going through a painful adjustment process. The value of farm assets is declining in relation to the late 1970's. The cause of this

Figure 7
Farming-Dependent Counties, 1975–79

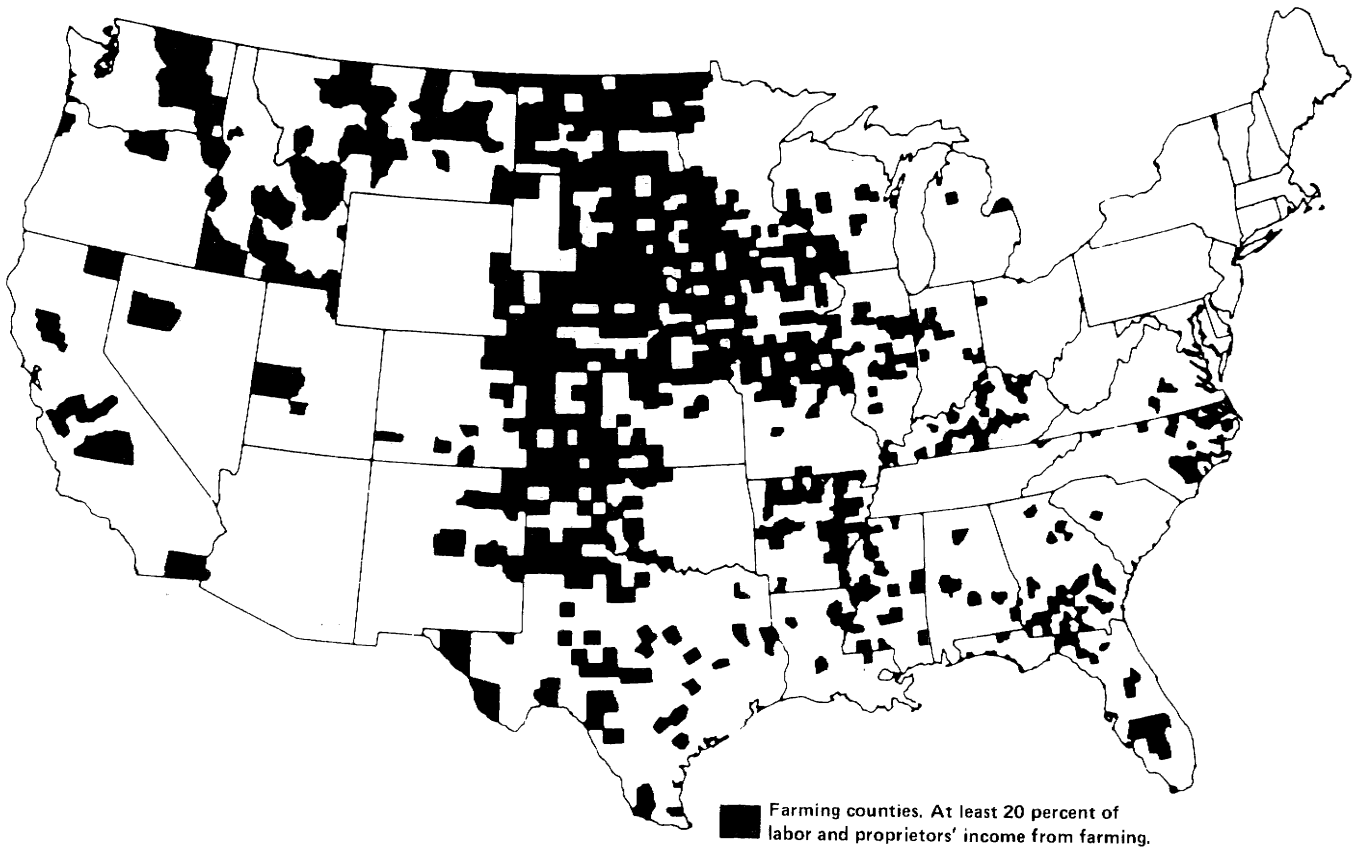


Table 13—Selected demographic and economic variables for farming-dependent counties, by degree of dependence on farming

Variable	Unit	Farming-dependent counties[1]			Other nonmetro counties
		Most highly dependent	Highly dependent	Moderately dependent	
Demographic:					
Population change—					
1960-70	Percent	-9.3	-4.4	-0.7	5.9
1970-80	do.	.3	7.8	11.6	17.0
1980-84	do.	0	3.1	3.2	3.8
Average population, 1980	Thousands	6.8	12.4	16.6	31.1
Population per square mile, 1980	Number	10	19	25	51
Population aged 25 and over who completed high school, 1980	Percent	60	58	56	57
Percentage of population aged 65 and over, 1980	do.	16.3	15.6	15.4	13.3
Economic structure:					
Percentage of income from—					
Farming, 1975-79	do.	46	32	23	8
Manufacturing, 1979	do.	5	10	16	25
Percentage of farmers who worked 200 days or more off farm, 1982	do.	21	26	30	39
Economic well-being:					
Per capita personal income, 1980	Dollars	8,389	7,396	7,256	7,311
Per capita transfer payments, 1979[2]	do.	1,025	1,038	1,071	1,071
Per capita Federal outlays for agricultural commodities, 1980	do.	362	172	140	34
Per capita total Federal outlays, 1980	do.	1,648	1,429	1,393	1,495

Note: Population growth rates are based on weighted averages.

[1]Labor and proprietor income (LPI) from farming accounted for 20 percent or more of total county LPI during 1975-79. There are 234 counties in each of the three groups of farming-dependent counties and 1,741 other nonmetro counties. LPI from farming in the top third group was 37 percent or more of total county income. For the middle third, it was 27-36 percent, and, for the bottom third, it was 20-26 percent. [2]These are social program transfers such as Social Security and Medicare. These payments do not include Federal farm subsidy payments.

Table 14—Dependence on export-oriented commodities, 1978 and 1982

Farm production region[1]	Value of farm sales from wheat, corn, soybeans, and cotton	
	1978[3]	1982
	Percent	
United States[2]	21.5	26.2
Northeast	7.3	7.4
Appalachia	18.4	19.3
Southeast	10.0	14.1
Delta	25.8	39.6
Corn Belt	45.1	49.0
Lake States	24.1	24.9
Northern Plains	25.8	30.0
Southern Plains	7.5	17.8
Mountain	10.4	17.7
Pacific	5.7	12.2

[1]Northeast: ME, NH, VT, MA, CT, RI, NY, NJ, PA, MD, DE. Appalachia: VA, WV, KY, TN, NC. Southeast: SC, GA, AL, FL. Delta: LA, AR, MS. Corn Belt: OH, IN, IL, IA, MO. Lake States: MI, WI, MN. Northern Plains: ND, SD, NE, KS. Southern Plains: OK, TX. Mountain: MT, WY, ID, CO, UT, NV, AZ, NM. Pacific: WA, OR, CA.

[2]U.S. total does not include Alaska and Hawaii.

[3]Sales data for corn, wheat, and soybeans are not available for 1978. Estimated sales for 1978 were obtained by using the 1982 proportion of corn, wheat, and soybeans in total grain sales and applying this percentage to the value of grain sales in 1978.

Source: [*11*].

adjustment has been post-1980 macroeconomic conditions which reduced the unusually high pre-1980 expected returns from farming. When the lower expected returns were capitalized at the recent very high real interest rates, it became clear that the prevailing values of assets in the sector were too high. Farm asset values, primarily land, began to fall. Farm operators bore the brunt of the asset devaluation. Some farmers who were heavily in debt could no longer meet their financial obligations. The number of farmers who quit farming for financial reasons increased in the early to mid-1980s. Current indications are that farm sector assets may decline by an additional 10 percent below 1986 levels before returns to capital become positive again.

Perhaps as many as 15 percent of the farm operators who were in the business before 1980 may leave farming for financial reasons before the adjustment process is completed. The farmers who remain in farming may be financially weaker than before, but they should be able to survive.

Although the value of farmland will be lower because of the recent economic difficulties, the amount of land farmed and the total physical output of the sec-

tor should not be appreciably smaller than in the heydays of the late 1970's.

Nonmetro areas have not participated as fully as metro areas in the economic recovery from the 1982 recession. Not only has the farm sector faced financial difficulties, but intensified foreign competition has restrained employment growth in the manufacturing sector, once the hope of rural economic expansion. These combined forces of economic stress have been greatest in the rural Midwest, where severe problems in both agriculture and manufacturing

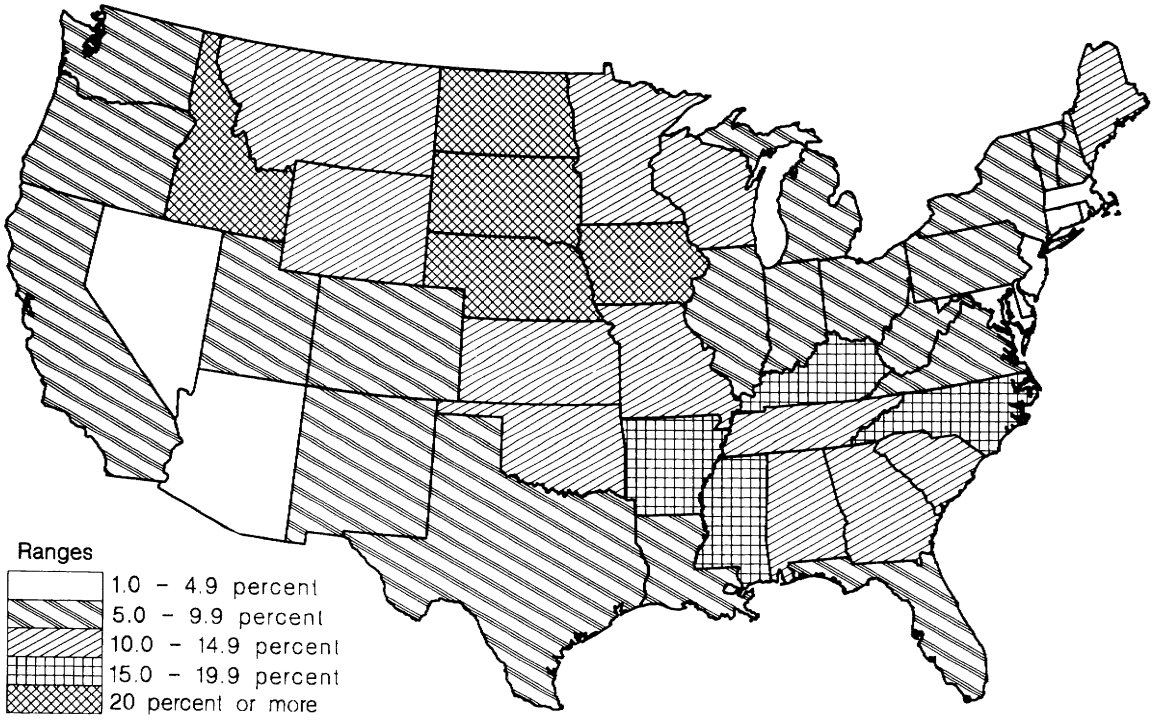
Table 15—Agricultural employment linkages in nonmetro areas, by region, 1982

Region[1]	Farm sector[2]	Direct agricultural linkages			Final consumption linkages	Total agriculture-related employment[3]
		Input industries (backward linkages)	Processing and marketing industries (forward linkages)	Total agribusiness linkages	Food and fiber wholesaling and retailing (forward linkages)	
				Percent		
United States	14.7	1.2	6.0	7.2	8.5	32.7
Northeast	6.9	.5	5.2	5.7	9.1	27.4
Appalachia	13.8	.7	10.3	11.0	7.2	34.3
Southeast	12.6	1.0	11.8	12.8	7.6	35.5
Delta	15.3	1.2	7.1	8.3	7.3	33.0
Corn Belt	16.4	1.9	3.9	5.8	8.4	33.4
Lake States	17.6	1.6	3.9	5.5	9.6	35.6
Northern Plains	21.9	2.5	4.3	6.8	8.3	38.3
Southern Plains	19.6	1.2	3.8	5.0	8.5	34.9
Mountain	11.2	1.4	2.3	3.7	10.5	26.4
Pacific	15.4	1.0	2.5	3.5	10.8	31.7

[1]Northeast: ME, NH, VT, MA, CT, RI, NYL, NJ, PA, MD, DE. Appalachia: VA, WV, KY, TN, NC. Southeast:SC, GA, AL, FL. Delta: LA, AR, MS. Corn Belt: OH, IN, IL, IA, MO. Lake States: MI, WI, MN. Northern Plains: ND, SD, NE, KS. Southern Plains: OK, TX. Mountain: MT, WY, ID, CO, UT, NV, AZ, NM. Pacific: WA, OR, CA. [2]Includes agricultural services, farm operators and proprietors, and farm wage and salary workers. [3]Total includes employment in secondary or indirectly related agribusinesses.

Figure 8

Percentage of Total Employed Working in Farming and Agribusiness Industries, 1982



reduced the number of jobs available during the recession and dampened the recovery from the recession. Also, many banks in the rural Midwest have faced high loan-delinquency rates and may have been forced to curtail loans to both farm and other borrowers, further dampening growth of employment opportunities. All these factors suggest that many of the unemployed will have trouble finding work within their communities and perhaps within the region. Many rural communities will continue to face difficult economic adjustments in the months and years immediately ahead.

Rural local governments are also feeling the squeeze of this economic downturn. Such governments in the most rural counties had relatively higher tax burdens on their citizens in 1982 than did other local governments in the country. Because some local governments will have difficulty maintaining current revenues in light of the present economic conditions, many will be unable to provide stable environments for economic growth, much less effectively manage a declining population. These rural governments will largely be unable to increase taxes and many will have to cut services. At risk are such basic public services as education, health care, highways, fire protection, and public welfare.

Programs to address the problems of rural areas should focus on two main objectives:

- Providing relief to distressed individuals and encouraging marginal workers in agriculture and other industries to move into jobs where they can be more productive, and

- Providing financial assistance to the most stressed local governments to enable them to maintain the quality of education and other essential public health and safety services.

The shrinking nondefense Federal budget emphasizes the need to consider carefully how to use remaining funds. Although current policies favor looking to the private sector to contribute solutions to developmental and human resource problems, significant Federal money will probably continue to be spent on both farm-sector and community problems. Government programs must be carefully designed to assure that they are used for the highest priorities and are targeted specifically to the intended recipients. This goal may entail redirecting some Federal programs.

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